

ABSTRACT

[0001] This invention provides a system that combines a wavelength multiplexer with an FM discriminator for chirp reduction and wavelength locker in a filter to produce a wavelength division multiplexed signal with reduced chirp. A partially frequency modulation laser signal is converted into a substantially amplitude modulation laser signal. This conversion increases the extinction ratio of the input signal and further reduces the chirp. A wavelength division multiplexing (WDM) method is used for transmitting high capacity information through fiber optics systems where digital information is carried on separate wavelengths through the same fiber. Separate transmitters normally generate their respective signals that are transmitted at different wavelengths. These signals are then combined using a wavelength multiplexer to transmit the high capacity information through the fiber optic system. Various technologies can be used to multiplex the signals such as, for example, thin film filters, or arrayed waveguide gratings. In a WDM system, a wavelength locker may also be used that fixes the center wavelength of a transmitter to a reference. Wavelength lockers may include etalons or fiber gratings, either of which provides a reference wavelength. A control circuit typically compares the wavelength of the transmitter to the reference. An error signal adjusts the transmitter format wavelength by varying temperature or by other means to keep it locked to the reference wavelength.